UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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June 7, 2001

EMS TRANSMISSION 06/08/2001
Instruction Memorandum No. OR-2001-055
Expires: 9/30/2002

To:	Deputy State Directors, District Managers, Branch and Staff Chiefs	
From:	Associate State Director	
Subject:	Revised Grazing Allotment and Pastures Spatial Data Standard	

Program Area: Range Management

Purpose: This Instruction Memorandum establishes spatial data standards for grazing allotments and pastures. The data standard defines how this type of data is to be captured in a geographic information system (GIS), defines attributes used, and defines coding schemes used.

Policy/Action: This data standard is to be followed for all grazing allotments and pastures geospatial data. Transactional update tools have been developed. Field offices may begin initiating transactions as soon as a completed library access form (OR9167-5) and the name of the field office data steward have been provided to the State Data Administrator, Stan Frazier (OR955.2). The library access form may be accessed via the OR/WA Geospatial web site (http://web.or.blm.gov/GIS/docs/documents.htm).

Timeframe: This data standard is effective immediately.

Background: In order to make the Grazing Allotments and Pastures spatial data layer available for transactional updates, some minor revisions to the data standard were needed. Sections were added to the standard discussing Data Collection and Maintenance Protocols as well as a section on Quality Control. There were also some minor attribute changes made. The ACCURACY attribute was changed to match the same attribute in other layers; additional codes were added to the PASTURE BOUNDARY TYPE attribute; additional explanation to guide the use of the ALTPAST attribute was added, additional codes were added to the SYSTEM attribute, and some definitions were added. Finally, the entire standard was reformatted to conform to the “look” of other recently issued standards.

Manual/Handbook Sections Affected: This Instruction Memorandum supercedes Instruction Memorandum No. OR-2000-009.

Coordination: This standard was developed by a team of range management specialists in OR/WA field offices with assistance from GIS specialists and data administration.

Contacts:

Rick Hall	State Data Steward	541-573-4414
Stan Frazier	State Data Administrator	503-952-6009
Pam Keller	GIS Technical Support	541-573-4486

Districts with Unions are reminded to notify their unions of this IM and satisfy any bargaining obligations before implementation. Your Servicing Personnel Office or Labor Relations Specialist can provide you assistance in this matter.

Signed by Charles E. Wassinger	Authenticated by Mary O'Leary Management Assistant

1 Attachment	
	1 - Grazing Allotment and Pastures Data Standard (9 pp)

Distribution
WO-220 (314, LS) - 1
WO-500 (725, LS) - 1

Grazing Allotments and Pastures Data Standard

Date: 5/31/2001

Standard Name: Grazing Allotments and Pastures
Standard Abbreviation: GRA
Date Created: 5/15/2001

Layer Description

Livestock grazing allotment and pasture boundaries with associated attributes describing some basic characteristics of the allotments and pastures. This layer covers all lands (public and private) with polygons (see the ALTPAST attribute for the rules on how this is accomplished).

FOIA Category - Public

State Data Steward
Rick Hall
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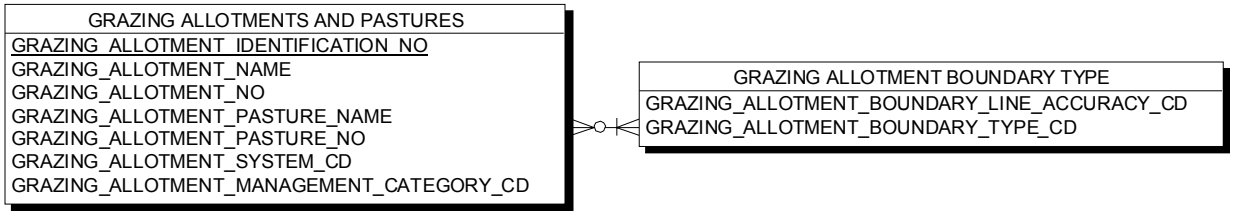
DATA COLLECTION AND MAINTENANCE PROTOCOLS

Accuracy Requirements: Positional accuracy is important for the Grazing Allotments (GRA) theme. The ACCURACY field within the line attribute table contains feature level accuracy information stratified by input method and the absolute accuracy (how close, in +/- feet, the GIS mapped feature is to the actual ground feature). This flags the less accurate lines for replacement when possible. It is expected that GPS will be used to more accurately locate fence lines.

Collection and Input Protocols: The District Data Steward will develop standard field data collection methods and work with the GIS Coordinator to develop corresponding standard GIS input methods. The most common methods of allotment and pasture line capture are: (1) Manuscript lines onto USGS quad maps and digitize; (2)GPS the pasture boundaries (fences) in the field and input the GPS coordinates into GIS; (3) Use orthophotos as a backdrop for on-screen digitizing; or (4) Import DLG fencelines, roads and other existing data. There are many sources for GRA lines because of the nature of pastures. A pasture is an area that keeps animals in. The boundaries of the pasture might include fences, roads, rivers or steep terrain. It is important to know what type of boundary each GIS line segment represents so that appropriate existing data can be brought in rather than digitizing new data. The PAST_BND_TYPE field within the line attribute table contains this information. A pervasive problem with GRA lines is the large degree of coincidence with subdivision lines. Very often constructed fences were intended to follow ownership, but in fact are slightly off. To avoid creating a huge number of sliver areas when the GRA theme is combined with the LLI theme, it is recommended that the District Data Steward and GIS Coordinator decide on a minimum distance under which coincidence will be forced. For example, if the mapped fence line is within 100 feet of the LLI line it is intended to follow, use the LLI line, not the mapped line. Fence lines that follow roads should be placed on the correct side of the road. Buffering the DLG road and using the appropriate buffer lines can make this input easier if it is not critical to capture the exact location of the fence. It is highly recommended that source maps be 1:24000 or better. It is also recommended that reference maps be maintained for each 7.5 minute (1:24000) quad on the District. The reference maps are used to show changes to the allotment and pasture boundaries and names over time.

Update Transactions: The unit of processing for updating the GRA theme is the district. This means that district-wide transactions will be initiated by editors within the districts to update the theme. Editors will "check-out" their district's GRA theme features. They will then add, delete or modify the features prior to "check-in". The district GIS Coordinator will approve update processes and provide assistance and oversight.

Update Frequency: Once the GRA theme has been created for a district it is the responsibility of the District Data Steward to ensure that the theme remains current. Bringing the theme up to a current level should take place at least once per year if not more frequently. It is also the responsibility of the Data Steward to ensure that any database external to the GIS (especially the Grazing Authorizations and Billing System - GABS) be kept current and consistent with the GIS.



QUALITY CONTROL

Transaction Level: This level of quality control occurs during feature update. Attributes are carefully checked, especially ALTPAST on the polygon features because ALTPAST is the key linking field. Lines are compared to other themes such as LLI, watersheds and roads for potential slivering problems. It is important not to unsplit the GRA line features or the values within the line feature attribute table may be lost. The GRA theme is a wall-to-wall polygon theme. This means that every acre of ground within a district needs to have a GRA label. There are many potentially confusing terms used to describe areas not under BLM grazing management (not allocated, unalloted, excluded, custodial, etc.) and it is important to understand the choices and differences. The SYSTEM field within the polygon attribute field contains this information.

Monitoring Level: The State Data Steward in conjunction with the District Data Stewards are responsible for reviewing the GRA theme across the state at least once per year. A key item to be reviewed is consistency between districts in attributing (e.g., same SYSTEM values used to mean same thing). Additional guidance for labeling may need to be developed. Consistency in minimum pasture size is another suggested check. Exclosures can be very small. At what minimum size should they be omitted from the GRA theme and shown as a small polygon or simple point on some other theme, e.g., Range Improvements. Progress toward similar levels of accuracy is another review item. Correct linkage to GABS should be tested at least annually.

DATA ORGANIZATION/STRUCTURE

In Arc/Info the attribute data is organized into two feature attribute files. A polygon attribute table (.pat) for information about the polygons and an arc attribute table (.aat) for information about the lines.

GRAZING ALLOTMENT BOUNDARY TYPE (gra.aat)

Description

Lines defining the allotment/pasture boundaries, attributed for source, type, and accuracy of the line data.

Attribute List

Structured Name	ArcInfo Name
GRAZING_ALLOTMENT_BOUNDARY_LINE_ACCURACY_CD	ACCURACY
GRAZING_ALLOTMENT_BOUNDARY_TYPE_CD	PAST_BND_TYPE

GRAZING_ALLOTMENT_BOUNDARY_LINE_ACCURACY_CD (ACCURACY)

Format:	A(5)
Uppercase:	Yes

Description

[Required]

Locational accuracy code which indicates how close to the true geographic location on the ground a GIS entity has been recorded. There are two aspects to accuracy: the tools used to get spatial entities into a GIS (turned into digital representations), and the actual accuracy - how far off (+ or - feet) is the digital product. Three types of tools are recognized: GPS (global positioning system), manuscripting onto a map or photo, and legal descriptions using Township, Range, and Section.

FOIA Category = Public

Allowable Codes

GPS
- GPS1 = within 3 feet.
- GPS2 = within 30 feet.
- GPS3 = within 300 feet.

Manuscripting
- MAN1 = within 40 feet
- MAN2 = within 100 feet
- MAN3 = within 150 feet.
- MAN4 = within 300 feet.
- MAN5 = within 660 feet (one-eighth mile).
- MAN6 = within 1,320 feet (one-quarter mile).
- MAN7 = within one-half mile.
- MAN8 = best estimate with no distance limit indicated.

DLG - U.S. Geological Survey Digital Line Graph (DLG) file.

GCDB - Line snapped to Oregon/Washington Geographic Coordinate Database (GCDB) points.

GRAZING_ALLOTMENT_BOUNDARY_TYPE_CD (PAST_BND_TYPE)

Format:	A(13)
Uppercase:	Yes

Description

[Required]

The physical feature types that forms the pasture/allotment boundary.

FOIA Category = Public

Allowable Codes

RIM -	Line generally follows a rim, contour line, or natural barrier.
FENCE -	Line follows a constructed fence line.
ROAD -	Line was digitized, copied, or derived from road theme data.
STREAM_RBANK -	Downstream right bank of stream pasture boundary indicates that the stream is within the downstream left pasture.
STREAM_LBANK -	Downstream left bank of stream pasture boundary indicates that the stream is within the downstream right pasture.
STREAM_CENTER -	Stream center serves as boundary between two pastures.
PARCEL -	Boundary follows a legal line such as ownership or section lines.
PT-TO-PT -	Boundary not defined by any legal or geographic feature.
ROAD_OFFSET -	Boundary follows a road, but is offset from it on one side or the other.
UNKNOWN -	It is not known what feature forms the allotment/pasture boundary.

GRAZING ALLOTMENTS AND PASTURES (gra.pat)

Description

Area of land designated and managed (i.e., allotted) for livestock grazing. The polygons are attributed by a pasture number and naming system that is consistent with the Grazing Authorization and Billing System (GABS). All land, regardless of ownership or whether it is used for livestock grazing, is covered with a polygon. In cases where the land is not managed by the BLM or is not allocated for livestock grazing, the attribute SYSTEM would indicate that the polygon is not allocated.

Annotation

Entity Definition Source: 43CFR4100.05 and BLM Manual H-4110-1.22D

Attribute List

Structured Name	ArcInfo Name
GRAZING_ALLOTMENT_IDENTIFICATION_NO	ALTPAST
GRAZING_ALLOTMENT_NAME	ALLOT_NAME
GRAZING_ALLOTMENT_NO	ALLOTMENT_NBR
GRAZING_ALLOTMENT_PASTURE_NAME	PAST_NAME
GRAZING_ALLOTMENT_PASTURE_NO	PAST
GRAZING_ALLOTMENT_SYSTEM_CD	SYSTEM
GRAZING_ALLOTMENT_MANAGEMENT_CATEGORY_CD	MGMTCAT

GRAZING_ALLOTMENT_IDENTIFICATION_NO (ALTPAST)

Format:	A(5)_A(2)
Uppercase:	N/A

Description

[Required]

The polygon ID for the allotment and pastures. It normally consists of the 5-character allotment number, an underscore (_), and the 2-character pasture number. All preceding blank characters must be populated with zeros. For example: allotment no. 302, pasture no. 2, would be input as 00302_02. This field may be used as a link to other related databases. There is a linkage between this attribute and the SYSTEM (Grazing_Allotment_System_CD) attribute. Certain codes in SYSTEM dictate the form that this (ALTPAST) attribute takes. The variations (rules) are as follows:

1) General Pastures usually contain a large percentage of public land, but can have a large percent of private land if the pasture is part of a grazing system in an allotment management plan (AMP). This is the type of pasture present in most allotments and is always listed in GABS. ALTPAST should have values like “0523_11" or “10522_03".

2) Fenced Federal Range (FFR) is an allotment or pasture which is mostly private, but which contains some public land fenced within. This area is always listed in GABS. ALTPAST should have standard format as for General Pastures, but with special allotment numbers reserved for FFR. SYSTEM generally has “CU”.

3) Mostly Private Pastures which contain a very small percentage of public land, usually slivers of public land where fences do not follow ownership lines. These pastures are included within an allotment but may or may not be listed in GABS. ALTPAST has the allotment number and “99" for the pasture number, e.g. “06010_99". SYSTEM has “99”.

4) Mostly Private Pastures, which contain a very small percentage of public land, where the acres are not included within an allotment and are not listed in GABS. ALTPAST has “99999" for the allotment number and sequential numbers for the pastures, e.g. “99999_01", “99999_02". SYSTEM has “99"

5) Not Allocated areas are closed to livestock grazing through a land use plan decision or legislation. No allotment or pasture numbers would be assigned to these areas and they would not be included in GABS. ALTPAST has “NOALLOC” and SYSTEM has “NX”.

6) Unallotted areas are not officially assigned to a particular livestock permit, but they may be grazed if someone applies for the use. These areas may have an allotment and/or pasture number and may be included in GABS. ALTPAST has “UNALLOT” or a special allotment number reserved for unallotted areas, and SYSTEM has “UA”.

7) Exclosures are areas designed and constructed with the idea of keeping livestock and sometimes wildlife out of a particular area. These areas would have a pasture number within an allotment and would be included in GABS. ALTPAST has standard value as in 1). SYSTEM has value “EX”, “RX”, “MX”, or “XX”.

8) Completely Private, state, USFWS or other land which are not part of any allotment controlled by an Oregon district. These areas would not be within any allotment or pasture and would not be in GABS. ALTPAST has “OUT” and SYSTEM has “00" (zeroes).

FOIA Category = Public

GRAZING_ALLOTMENT_NAME (ALLOT_NAME)

Format:	A(20)
Uppercase:	Yes

Description

[Recommended]

The official name assigned to a specific allotment. All keyboard characters may be used. If ALTPAST contains "99999_", "NOALLOC", or "OUT", then this attribute will be blank. If the allotment is a Fenced Federal Range, include FFR in the name (e.g., Pickled Butte FFR).

FOIA Category = Public

GRAZING_ALLOTMENT_NO (ALLOTMENT_NBR)

Format:	A(5)
Uppercase:	N/A

Description

[Recommended]

A unique number assigned to each allotment in a district or inventory area. All preceeding blank characters must be populated with zeroes. If ALTPAST contains "99999_", "NOALLOC", "UNALLOT" or "OUT", then this attribute is blank, otherwise the value must be identical to the first 5 characters of ALTPAST.

[NOTE - allotment_nbr name must be used in Arc/Info coverages in order to maintain compatability with the Bureau's Rangeland Information System (RIS)]

FOIA Category = Public

GRAZING_ALLOTMENT_PASTURE_NAME (PAST_NAME)

Format:	A(20)
Uppercase:	Yes

Description

[Optional]

The name of a specific pasture in an allotment. Allow all keyboard characters.

FOIA Category = Public

GRAZING_ALLOTMENT_PASTURE_NO (PAST)

Format:	A(2)
Uppercase:	N/A

Description

[Recommended]

The number used to identify a pasture within an allotment. All preceding blank characters must be populated with zeroes. Unless ALTPAST contains "OUT", "NOALLOC", or "UNALLOT", the value must be identical to the last 2 characters of ALTPAST. If ALTPAST contains one of those three words PAST should be blank.

FOIA Category = Public

GRAZING_ALLOTMENT_SYSTEM_CD (SYSTEM)

Format:	A2
Uppercase:	Yes

Description

[Required]

Primary grazing management system within the pasture.

FOIA Category = Public

Allowable Codes

WO	Winter Only: Winter use annually with no use extending into other seasons.
SP	Early Spring: Early spring use annually with no use extending into other seasons.
SS	Spring/Summer: Use throughout the critical growing season annually.
SL	Season Long: Season long use annually, including during the growing season (spring, summer, fall).
YL	Year Long: Use throughout the entire year (spring, summer, fall, winter) annually.
SD	Early Spring/Deferred: Early spring and after seed-ripe use annually.
DF	Deferred: Delay of livestock grazing on an area for an adequate period of time to provide for plant reproduction, establishment of new plants, or restoration of vigor of existing plants.
DR	Deferred Rotation: Any grazing system which provides for a systematic rotation of the deferment among pastures.
RR	Rest/Rotation: at least one year of rest from livestock grazing is scheduled within the rotation.
RE	Reservoir Enclosure: Grazed reservoir enclosure, fenced to allow livestock access from more than one pasture.
XX	Exclosure: An area fenced to exclude livestock grazing for non-specified reasons.
RX	Riparian Exclosure: Areas adjacent to water that are fenced to exclude livestock grazing.
EX	Experimental Exclosure: Study or experimental plot excluded from livestock grazing.
MX	Management Exclosure: Area excluded from livestock grazing to protect other resource values such as recreation sites, wildlife guzzlers, wells, disposal sites, or otherwise not suitable for grazing.
UA	Unalloted: Area is not officially assigned to a particular grazing permit but may be grazed if someone applies for the use.

NX Not Allocated: Area is closed to livestock grazing either through a land use plan or by legislation.

CU Custodial: Areas where the grazing system is not defined and resource values are protected, such as fenced federal range (FFR).

UN Grazing system is unknown.

00 Out: Area with no BLM land, not part of the allotment system.

99 Mostly private area with small slivers of BLM land (not currently managed).

GRAZING_ALLOTMENT_MANAGEMENT_CATEGORY_CD (MGMTCAT)

Format:	A1
Uppercase:	Yes

Description

[Optional]

Range condition assessment categories as defined in the rangeland program summary (RPS).

FOIA Category = Public

Allowable Codes

I Improve current unsatisfactory resource(s) condition.

M Maintain current satisfactory resource(s) condition.

C Custodial Allotment; manage “custodially”, while protecting existing resource values.

Definitions

Animal Unit - Considered to be one mature cow of approximately 1,000 pounds, either dry, or with a calf up to 6 months of age or equivalent based on a standardized amount of forage consumed.

AUM (Animal Unit Month) - The amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day.

GABS (Grazing Authorization and Billing System) - The system used by BLM for billing for grazing on public land. The system contains allotments, pastures, permittees, grazing fees and other pertinent information related to public land grazing.

Fenced Federal Range - Generally a small amount of public land fenced with a large amount of private land.

Seed Ripe - In terms of plant phenology, it is that point from where seed becomes hard to the beginning of seed dispersal.

Custodial - An area where the grazing system is not defined, and resource values on public land are protected.